#8

SEQUENCE LISTING

<110> THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
SUKUMAR, Saraswati
EVRON, Ella
DOOLEY, William C.
DAVIDSON, Nancy
FACKLER, Mary Jo.

<120> ABERRANTLY METHYLATED GENES AS MARKERS OF BREAST MALIGNANCY

<130> JHU1630-1

<140> US 10/059, 579
<141> 2002-01-28

<150> US 09/771,357
<151> 2001-01-26

<160> 136

<170> PatentIn version 3.1

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tctgggccaa gttaggcgcc gccgaggcca gcgctgaacg tctccagggc cggaggagcc 1800

gcggggcgtc cgggtctgag cctcagcaaa tgggctccga cgtgcgggac ctgaacgcgc 1860

tgctgcccgc cgtcccctcc ctgggtggcg gcggcggctg tgccctgcct gtgagcggcg 1920

cggcgcagtg ggcgccggtg ctggactttg cgcccccggg cgcttcggct tacgggtcgt 1980

tgggcggccc cgcgccgcca ccggctccgc cgccaccccc gccgccgccg cctcactcct 2040

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ccttcactgt ccacttttcc ggccagttca ctggcacagc cggagcctgt cgctacgggc 2160

ccttcggtcc tcctccgccc agccaggcgt catccggcca ggccaggatg tttcctaacg 2220

cgccctacct gcccagctgc ctcgagagcc agcccgctat tcgcaatcag ggtaagtagg 2280

ccggggagcg ccccta 2296

<210> 104
<211> 2495
<212> DNA
<213> Homo sapiens

<400> 104
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ctcacctatc tttttctgcc tgttggctta tggttgaaat tccttcatga cggtttccat 120

ttccagagat atcttgttaa caagtatata ccaccaaatg aagctgattt ttttttttt 180

ttttttttga gacagagtct cgctctgtcg cccaggctgg aatgcagtgg cgcgatcttg 240

gctcactgca acctccgcct cccatgttca agcgattctc ctgcctcagc ctcctgagta 300

gctgggatta ctggcatgtg ccaccgcgtc cagccaattt ttgtattttt agtagagacg 360

aggtttcacc atgttggtca ggctggtctc aaactcctga cctcgtgatc cacctgcctc 420

ggcctcccaa agtgctgaga ttataggtgt gagccaccat gcctggccat gaagctgatt 480

tttttaaacc atcatttaac attttctcca taaggtggca aggaggaaga gcatatgggg 540

actgggtact ttgagagacc ccaggacagg agacagggag gctgagattg gcatgttgtc 600

tgctgcagtt atttgccagc gacacactct ttccgtccaa actaacttct ctgcctcaag 660

gacagggaga ctctgccttt caacctgaga gaaaccagga ctctcagctt taatgaaaat 720

tggacttagg gtggggcagt ggagactttt cacagctatt gtttagctga tgaagcagat 780

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gcacacttgc gtctctctat tttggctaaa caccaaacag ctgaggctgg tactgtaaaa 900

ctttccctcc aaatgccccc cctcgtcttc ctctattaga gatctggatc acaaccctca 960

aaaaccatgt cccttatgcc acctgagtag atggtttgat gattaattag gcacagatgt 1020

gacactgggg gggtctcaca atggcctgtg ggtcacatgc tactttcctt ttcattttca 1080

tcagcaacag ctgccttaaa gccagttaag actgtggtcc tagtctcgca ccctggggct 1140

cctgctgggg tgggtgaggg gaacacccca ttaagctggg ggaactgggg ctgccaccag 1200

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cgccgtggcc ggaggcacag gtctccccgg tgccacttca agtgagttcg aggaagtacc 1320

tgggatcttt gatctaacgc gaaaggcctt cccagtgacc tcttgagggc tgagaaccca 1380

ctccctccac ctctagtcca cggctttgcc actccagggc ccgaggttac gtttgctgct 1440

ggggatttga caaacccaaa gcctctctgg tttcaccact ggctccttag aatcagacat 1500

ctgttctgaa tgacacttat gtgagtcagg ggctgaggac gtgatcctcg aagtgtggtc 1560

cccagactgg ctgtatcagt gtcggcatcc cccaggacct ggttggaaat gcatattctc 1620

aggccctact ccagacctct taaatctgag actggggctg cggggagcgc catctgtgcg 1680

ccactatcct tgtgggtgga ccaggagtcg gttcgagggt gctcccactt agaggtcacg 1740

cgcggcgtcg ggcgttcctg agaccgtcgg gctccctggc tcggtcacgt gggctcaggc 1800

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gcttgtgatc ttttcagttt ctccagctgc tggctttttg gacacccact cccccgccag 1920

gaggcagttg caagcgcgga ggctgcgaga aataactgcc tcttgaaact tgcagggcga 1980

agagcaggcg gcgagcgctg ggccggggag ggaccacccg agctgcgacg ggctctgggg 2040

ctgcggggca gggctggcgc ccggagcctg agctgcagga ggtgcgctcg ctttcctcaa 2100

caggtggcgg cggggcgcgc gccgggagac ccccccctaat gcgggaaaag cacgtgtccg 2160

cattttagag aaggcaaggc cggtgtgttt atctgcaagc cattatactt gcccacgaat 2220

ctttgagaac attataatga cctttgtgcc tcttcttgca aggtgttttc tcagctgtta 2280

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tgcagtcaat ccatcttacc cctggagcac ggctccatat acataccttc ctcctatgta 2400

gacagccacc atgaatatcc agccatgaca ttctatagcc ctgctgtgat gaattacagc 2460

attcccagca atgtcactaa cttggaaggt gggcc 2495

<210> 105
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 105
gagctcgagc cacgccatgc ccgctgcacg tgccagcttg cgcagcacat cagggcgctg 60

gtctctcccc ttcctcctgg agtgaaatac accaaagggc gcggtggggg tgggggggtga 120

cgggaggaag gaggtgaaga aacgccacca gatcgtatct cctgtaaaga cagccttgac 180

tcaaggatgc gttagagcac gtgtcagggc cgaccgtgct ggcggacttc accgcagtcg 240

gctcccaggg agaaagcctg gcagagtgag gcgcgaaacc ggagggtcgg cgaggatgcg 300

ggcgaaggac cgagcgtgga ggcctcatgc ctccggggaa aggaaggggt ggtggtgttt 360

gcgcaggggg agcgaggggg agccggacct aatccctcac tcgccccctc cccctcccgg 420

gccatttcct agaaagctgc atcggtgtgg ccacgctcag cgcagacacc tcgggcggct 480

tgtcagcaga tgcaggggcg aggaagcggg tttttcctgc gtggccgctg ggcgggggaa 540

ccgctgggag ccctgccccc ggcctgcggc ggccctagac gctgcaccgc gtcgccccac 600

gggccccgaa gagcccccag aaacacgatg gtttctgctc gaggatcaca ttctatccct 660

ccagagaagc acccccccttc cttcctaata cccacctctc cctccctctt cttcctctgc 720

acacactctg cagggggggg cagaagggac gttgttctgg tccctttaat cggggctttc 780

gaaacagctt cgaagttatc aggaacacag acttcaggga catgaccttt atctctgggt 840

atgcgaggtt gctattttct aaaatcaccc cctcccttat ttttcactta agggacctat 900

ttctaaattg tctgaggtca ccccatcttc agataatcta ccctacattc ctggatctta 960

aatacaaggg caggaggatt aggatccgtt ttgaagaagc caaagttgga gggtcgtatt 1020

ttggcgtgct acacctacag aatgagtgaa attagagggc agaaatagga gtcggtagtt 1080

ttttgtgggt tgcctgtccg gggcccctgg catgcaggct ggatggaggg agaggggtgg 1140

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gagaggggaa aaggagggag ggagggagag attgaaagga ggaggggagg accgggaggg 1260

gaggaaaggg gaggaggaac cagagcgggg aggcgcgggg agagggagga gagctaactg 1320

cccagccagc ttgcgtcacc gcttcagagc ggagaagagc gagcagggga gagcgagacc 1380

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cccctattta gccaaaggaa ggaggtcagg ggaacgctct cccctcccct tccaaaaaac 1560

aaaaacagaa aaacccтttt ccaggccggg gaaagcagga gggagagggg ccgccgggct 1620

ggccatggag 1630

<210> 106
<211> 1800
<212> DNA
<213> Homo sapiens

<400> 106
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aggcgtagtc ctttggatgt tggggagcgt cagactgggt cgttgtagag gggaaaggag 120

ggcccagaag ggcgagagag caggccggga cgcaaatcct cagcccccgc ggcgcgccac 180

gtcttcagaa acgccaggac ctccgggctg ggccgccgcg gtttggcctt tggaactcaa 240

gggttcgtct acctgaccat tgggtggctc cgcggttgac acttttcttg gcatgccccc 300

ccaccccgcg ccacaccacc cccccagccc cagcaatcca aatcggcccc acggacctag 360

agggctcttg ggcgagatga gacatcaccc actgtgtaga agctgttgcc attgctgctg 420

tcacagccac tccggatggg gctgccaccg tggccaggac agtctcctcc gaccgcttcc 480

tgggctgcgc tagggttcgg gggcgctgcc cgcacgctcc ggcggggaag gaaatcgccc 540

cgcgcccgcc ggaggaaggc gacggggagg gaaggggggag ggcggctagg aggcgggtgg 600

aggggccggc cgcccgggcc aggtcgtttt tgaatggttt gggaggacga attgttagac 660

cccgaggaag ggaggtggga cgggggaggg ggactggaaa gcggaaactt tcctataaaa 720

cttcgaaaag tccctcctcc tcacgtcagg ccaatgacac tgctgccccc aaactttccg 780

cctgcacgga ggtataagag cctccaagtc tgcagctctc gcccaactcc cagacacctc 840

gcgggctctg cagcaccggc accgtttcca ggaggcctgg cggggtgtgc gtccagccgt 900

tgggcgcttt ctttttggga cctcggggcc atccacaccg tcccctcccc ctcccgcctc 960

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cagtcgctga acgaggcgtt cgccgcgctg cggaagatca tccccacgct gccctcggac 1560

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gtcctccaga gcgacgagct ggactccaag atggcaagct gcagctatgt ggctcacgag 1680

cggctcagct acgccttctc ggtctggagg atggaggggg cctggtccat gtccgcgtcc 1740

cactagcagg cggagccccc cacccccctca gcagggccgg agacctaggt aaggaccgcg 1800

<210> 107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer

<400> 107
tttcggatgg ggttgttatc 20

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer

<400> 108
cctaacccaa acaaccaacc 20

<210> 109
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer

<400> 109

tttggatggg gttgttattg t 21

<210> 110
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer

<400> 110
aaacgaccta acccgaacg 19

<210> 111
<211> 23
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer

<400> 111
agggaagttt tttttatttg gtt 23

<210> 112
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 112
gtggttttgt tttgtatgtt ttggtg 26

<210> 113
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 113
caccgaaaca tacaaaacaa aaccac 26

<210> 114
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer

<400> 114
gtttgttaag aggaagtttt 20

<210> 115
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 115
caccgaaaca tacaaaacaa aaccac 26

<210> 116
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer

<400> 116
ggtacgggtt ttttacggtt cgtc 24

<210> 117
<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 117
aacttcttat acccgatcct cg 22

<210> 118
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer

<400> 118
ggtatgggtt ttttatggtt tgtt 24

<210> 119
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 119
caaaacttct tatacccaat cctca 25

<210> 120
<211> 1794
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (359)..(359)
<223> n is any nucleotide

<400> 120
ctttgctctc catctgtcat acttctgcag gtgacagacg agtgaggaca tttagagaaa 60

ctcaggaaca aaccaggccc atccactggc gtcgaggcta gtttcgaaga cagaaaaacg 120

ccccacttct gtttgcactg tggctgcctg tggcccggcc ggggaggcgg ccgggagtga 180

ggcctgatcg tccctggcgc ctccacctcc ccaggcgcag aaggcgccca cgaggacccc 240

cagtgcccga cgttgccacg gtctgggatc agaggcacgg gaccagggag ccaggaactg 300

cgccgccccg ccctgcctgg cgcgaggaag ctccctcacc gggccagcct gcaggggngg 360

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tgtcgtatct ttctctccct gtcgctgtct gttcttcctc tccctgctgc tgccgtcggt 480

tctgtctctt ctctgtcgtt cccttctccc cttcgccctc gtgtcgctgc ttatataagt 540

gagaaaaaaa aaaccaaaaa aacagacatg ttgctaagat agtctttccc attattttct 600

tatttcaaac gtgatctggt cttccacgcc tccgctagca ttaacaaaaa caaaacgtca 660

cagtgctggc cgccgtatct cggatagcca ttttccggcc tccaatccca gtccaatggc 720

ccgtggggac cccattccca agtttccact gtcggaatct ttctatgacc aggtacccag 780

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cctggggaca cccgtctgcc ccccgtctgg agaccggctc ctcatcctgc aaggcgcagc 1500

gcgagtgtcc cctcccttgg gggcctgtcc cggaccctgc acagagttca ccggtccttc 1560

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cggggagccg ggcagggcgc gacggttcct gggcgcctcc cgcgggggcg cgtcctggac 1740

ctgccttctg gggaccccgg cgcgcaggcg gtgacccctc cctgttcgct tgca 1794

<210> 121
<211> 900
<212> DNA
<213> Homo sapiens

<400> 121
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taaagctggc ctccagaaac acgggtatct ccgcgtggtg ctttgcggtc gccgtcgttg 120

tggccgtccg gggtggggtg tgaggagggg acgaaggagg gaaggaaggg caaggcgggg 180

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gctgaagtcg gggcccgccc tgtggccccg cccggcccgc gcttgctagc gcccaaagcc 360

agcgaagcac gggcccaacc gggccatgtc gggggagcct gagctcattg agctgcggga 420

gctggcaccc gctgggcgcg ctgggaaggg ccgcacccgg ctggagcgtg ccaacgcgct 480

gcgcatcgcg cggggcaccg cgtgcaaccc cacacggcag ctggtccctg gccgtggcca 540

ccgcttccag cccgcggggc ccgccacgca cacgtggtgc gacctctgtg gcgacttcat 600

ctggggcgtc gtgcgcaaag gcctgcagtg cgcgcgtgag tagtggcccc gcgcgcctac 660

gagagcggaa ggggcagcca aggggcagcg cagtcgccgc gggtcaagtc gcggcagagg 720

gggtcggcgg ggacagctcc cgaggactag gtccgttact ttcgccccat cgctgaagag 780

tgcgcgaaaa tggtttatcc cttgtcgcac tccactcgta tctgggccac agatgagcag 840

aggtggctgc ttatatgtaa aaatacgctg attttaagtt tcttatcttt aaaatgcctt 900

<210> 122
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 122
gggagtttga gtttattgag t 21

<210> 123
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> PCR antisense primer

<400> 123
acccctaac tacccctc 19

<210> 124
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 124
gttggtattc gttgggcgc 19

<210> 125
<211> 9
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 125
gttgggcgc 9

<210> 126
<211> 19
<212> DNA
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<220>
<223> PCR antisense primer

<400> 126
gcaccacgta tacgtaacg 19

<210> 127
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 127
ggttgtattt ggttggagtg 20

<210> 128
<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> PCR antisense primer

<400> 128
ctacaaacct ttacacacaa ca 22

<210> 129
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 129
tatttttgt aaagatagtt ttgat 25

<210> 130
<211> 22
<212> DNA
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<220>
<223> PCR antisense primer

<400> 130
tacaactttc taaaaataac cc 22

<210> 131
<211> 23
<212> DNA
<213> Artificial sequence

<220>
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<400> 131
gagatgagat attatttatt gtg 23

<210> 132
<211> 23
<212> DNA
<213> Artificial sequence

<220>
<223> PCR antisense primer

<400> 132
aacaacaata tcattaacct aac 23

<210> 133

<211> 22
<212> DNA
<213> Artificial sequence

<220>
<223> PCR sense primer

<400> 133
gtaggagggt ttatttttg tt 22

<210> 134
<211> 23
<212> DNA
<213> Artificial sequence

<220>
<223> PCR antisense primer

<400> 134
aattacattt tccaaactta ctc 23

<210> 135
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Forward primer

<400> 135
gaacgcgagc gattcgagt 19

<210> 136
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Reverse primer

<400> 136
gaccaatcca accgaaacg 19